

# Hepatitis C Positive Donor to Hepatitis C Negative Recipient Transplant Program

Tracy Gowan, MSN, APRN, FNP-C<sup>1</sup>, Barbra Cave, PhD, APRN, FNP-BC<sup>2</sup>

<sup>1</sup> University of Louisville Hospital, Louisville, Kentucky

<sup>2</sup> University of Louisville, Louisville, Kentucky



## Introduction

- The rate of people with end-stage liver and/or kidney disease who may benefit from organ transplantation has long out-paced the availability of these life-saving organs.
- Hepatitis C virus (HCV) infection may cause liver failure and is a leading indication for transplant.
- Since protease inhibitor and ribavirin-free direct-acting antivirals became available in 2016, treating and curing HCV infected patients has become common.
- In 2018, data emerged suggesting patients needing liver and/or kidney transplant(s) who were not already infected with HCV could receive an HCV-infected organ and be successfully cured in the post-transplant period.
- Now, treatment of HCV infected kidney and liver transplant patients has become common.
- The use of HCV infected liver and kidneys for transplant has greatly increased because HCV positive donor organs are no longer exclusively reserved for HCV positive recipients or discarded.

## Background

- The Jewish Hospital Transplant program has been transplanting organs since 1964 and has been a leader in the field of solid organ and hand transplantations.
- In January 2019, the Hepatitis C Positive Donor to Hepatitis C Negative Recipient Transplant Program for liver transplants began, followed by kidney transplants in December 2019. The purpose of this program evaluation is to describe the patients transplanted, and to report the number starting DAA therapy, completing treatment, achieving cure. Adverse effects are also reviewed.

## Methods

- Criteria for receiving an HCV positive liver transplant included a MELD score greater than 18 and no known malignancy. Kidney transplant recipients must have been in end-stage renal disease and met all usual and customary criteria for transplant.
- Candidates who met the criteria for liver, kidney, or both were evaluated by a transplant surgeon and nurse practitioner
- The risk and benefits of receiving an HCV positive organ were discussed with all candidates who agreed to accept an HCV positive organ
- Patients who consented to receiving an HCV positive organ were flagged in the United Network for Organ Sharing database.
- When an organ became available, patients were transplanted followed by treatment with a DAA in the post-transplant period.

## Results

- From December 2019 through September 2020, 21 patients have received an HCV positive organ transplant; 6 liver, 14 kidney and 1 simultaneous liver and kidney. The age range was 30-74 years, mean 58.4 years. Six women and 15 men were transplanted.
- 20 patients started treatment with a DAA. As of September 2020, 16 patients have completed treatment and 11 have achieved cure. One patient experienced virologic treatment failure, and one liver transplant recipient died from sepsis prior to receiving DAA therapy.

## Results

Figure 1 Distribution of Direct Acting Therapy

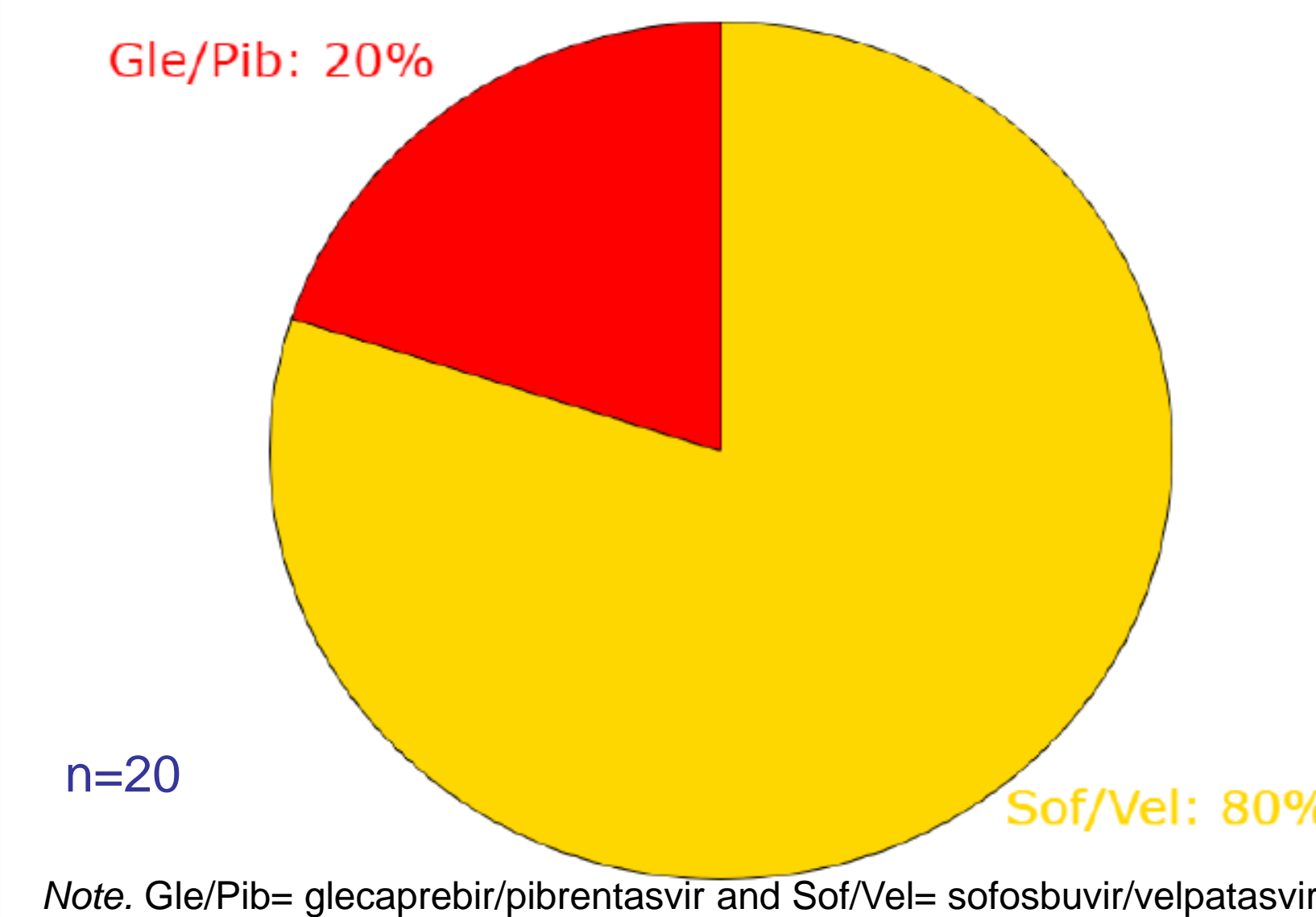


Figure 2 Adverse Effects

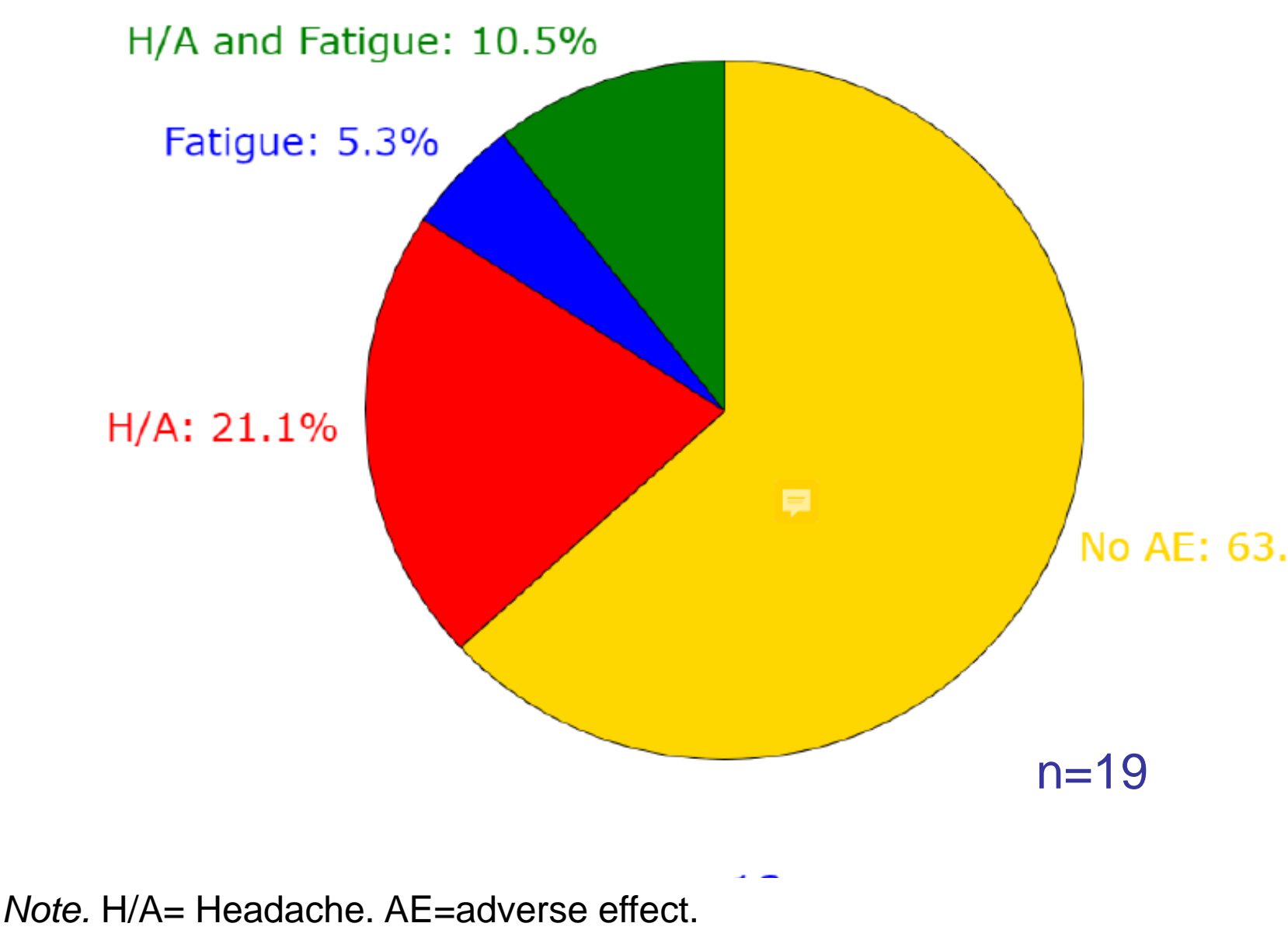


Figure 3 Distribution of Gender

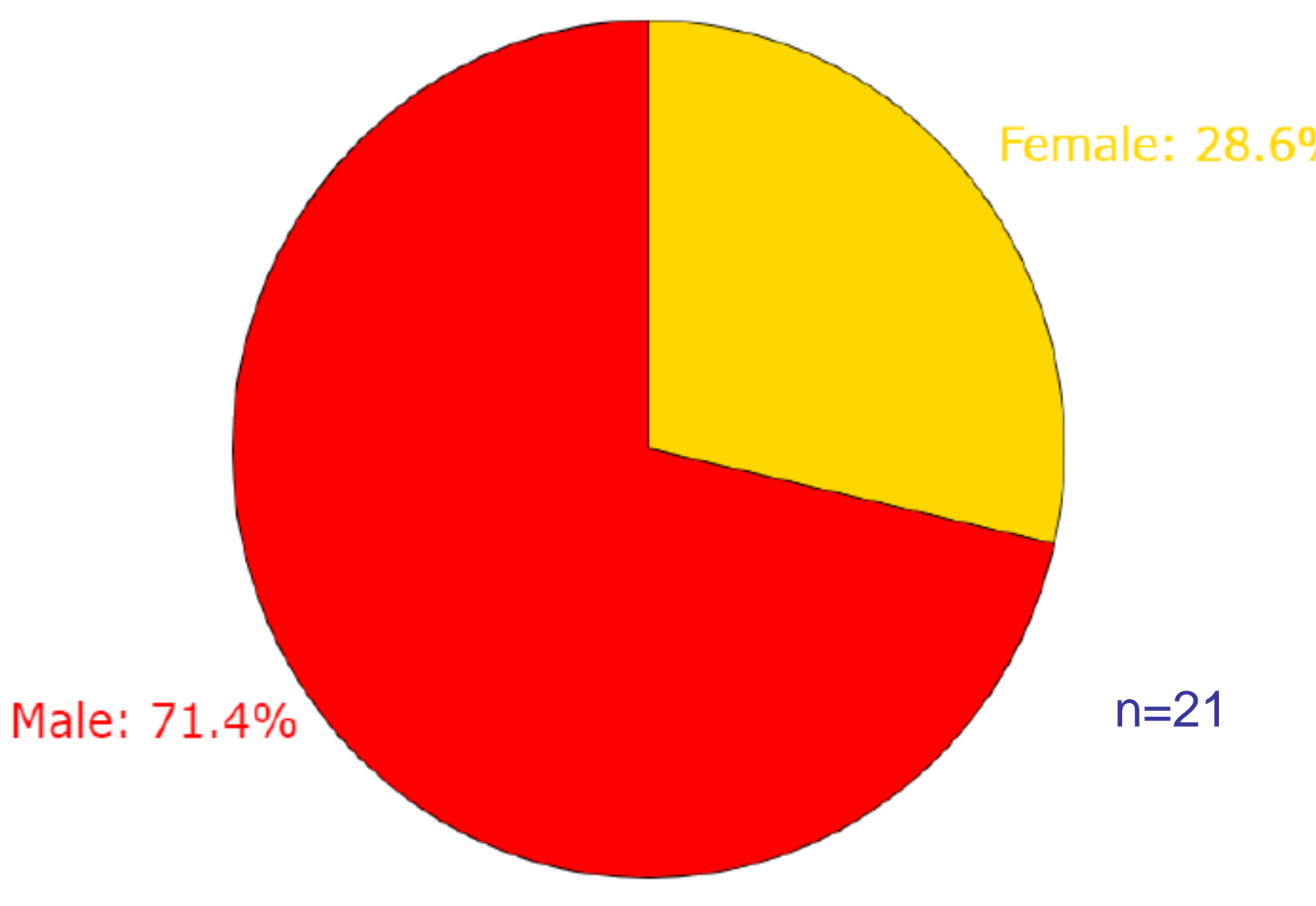
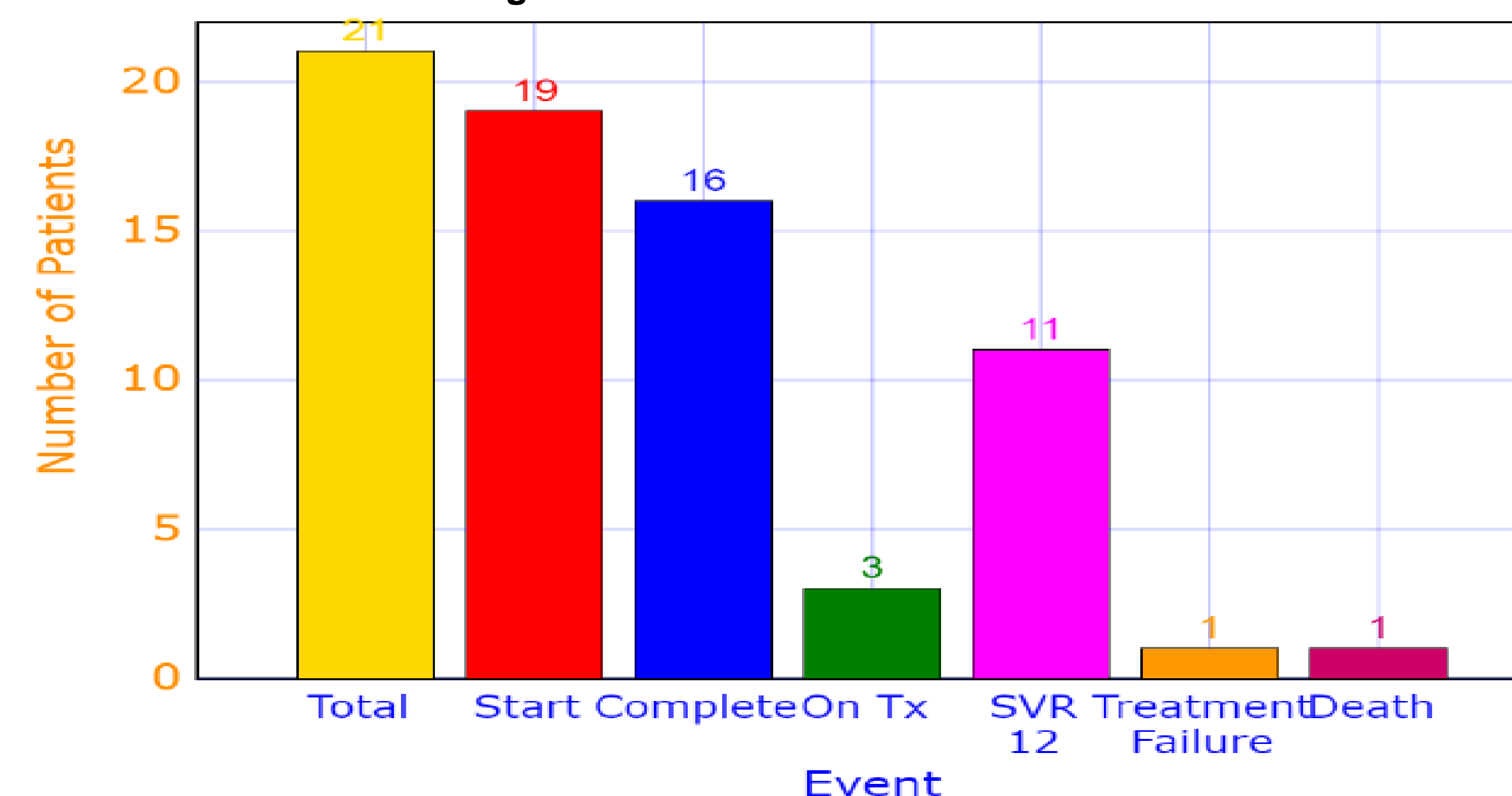


Figure 4 Treatment Cascade



## Conclusion

- The UofL Health Jewish Hospital Hepatitis C Positive Donor to Hepatitis C Negative Recipient Transplant Program has increased availability of donor organs and transplantations for people with end stage liver or kidney disease.
- Using DAA therapy in the post-transplant period is well-tolerated among patients and yields similar efficacy as non-transplant patients.

## References

- Kwong, A. J., Wall, A., Melcher, M., Wang, U., Ahmed, A., Subramanian, A., & Kwo, P. Y. (2019). Liver transplantation for hepatitis C virus (HCV non-viremic recipients with HCV viremic donors). *American Journal of Transplantation*, 19(5), 1380-1387.
- Molnar, M. Z., Nair, S., Cseprekal, O., Yazawa, M., Talwar, M., Balaraman, V., ... & Campos, L. (2019). Transplantation of kidneys from hepatitis C-infected donors to hepatitis C-negative recipients: Single center experience. *American Journal of Transplantation*, 19(11), 3046-3057.
- Reese, P. P., Abt, P. L., Blumberg, E. A., Van Deerlin, V. M., Bloom, R. D., ... & Naji, A. (2018). Twelve-month outcomes after transplant of hepatitis C-infected kidneys into uninfected recipients: A single-group trial. *Annals of internal medicine*, 169(5), 273-281.

This work was not funded.